



Workplace Intelligence

USER MANUAL



FCA-1500

Facial + Card + Access control

Touchless biometric facial recognition
4.3 Inch Touchscreen with id card scan
access control system



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Document Conventions

Conventions used in this manual are listed below:

GUI Conventions

For Software	
Convention	Description
Bold font	Used to identify software interface names e.g., OK , Confirm , Cancel
>	Multi-level menus are separated by these brackets. For example, File > Create > Folder.
For Device	
Convention	Description
<>	Button or key names for devices. For example, press <OK>
[]	Window names, menu items, data table, and yield names are inside square brackets. For example, pop up the [New User] window
/	Multi-level menus are separated by forwarding slashes. For example, [File/Create/Folder].

Symbols

Convention	Description
	This implies about the notice or pays attention to, in the manual
	The general information which helps in performing the operations faster
	The information which is significant
	Care taken to avoid danger or mistakes
	The statement or event that warns of something or that serves as a cautionary example.

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Safety Measures

The below instructions intend to ensure that the user can use the product correctly to avoid danger or property loss. The following precautions are to keep the user's safety and prevent any damage. Please read carefully before installation.

1. **Read, follow, and retain instructions** - All safety and operational instructions must be properly read and followed before bringing the device into service.
2. **Do not ignore warnings** - Adhere to all warnings on the unit and in the operating instructions.
3. **Accessories** - Use only manufacturer-recommended or product-sold accessories. Please do not use any other components other than manufacturer suggested materials.
4. **Precautions for the installation** – Do not place this device on an unstable stand or frame. It may fall and cause serious injury to persons and damage to the device.
5. **Service** - Do not try to service this unit yourself. Opening or removing covers may expose you to hazardous voltages or other hazards.
6. **Damage requiring service** - Disconnect the system from the main AC or DC power source and refer service personnel under the following conditions:
 - When cord or connection control is affected.
 - When any liquid is spilled, or an item dropped into the system.
 - If exposed to water and/or an inclement weather (rain, snow, and more).
 - If the system is not operating normally under operating instructions.

Just change controls defined in operating instructions. Improper adjustment of the controls may result in damage and involve a qualified technician to return the device to normal operation.

7. **Replacement parts** - When replacement parts are needed, service technicians must only use replacement parts provided by the supplier. Unauthorized substitutes can result in a burn, shock, or other hazards.
8. **Safety check** - On completion of service or repair work on the unit, ask the service technician to perform safety checks to ensure proper operation of the unit.
9. **Power sources** - Operate the system only from the label's power source form. If the sort of power supply to use is unclear, call your dealer.
10. **Lightning** - External lightning conductors can be installed to protect against electrical storms. It stops power-ups from destroying the system.

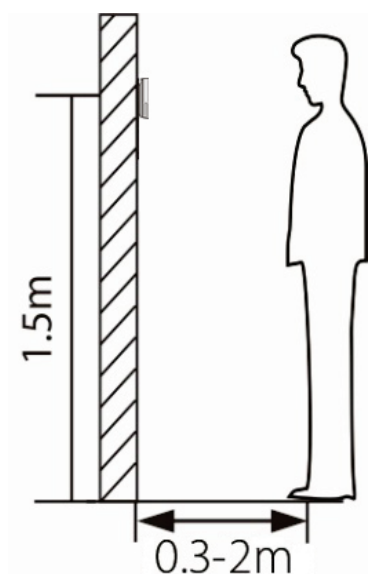
NOTE: The devices should be installed in areas with limited access.

1 Instruction for Use

Before getting into the device features and its functions, it is recommended to be familiar to the below fundamentals.

1.1 Standing Position, Facial Expression and Standing Posture

● The recommended distance



It is recommended to have a 0.5m space between the device and the user whose height is in a range of 1.55m to 1.85m. Users may slightly move forwards or backward to improve the character recognition of facial images

● Recommended Standing Posture and Facial Expression



Standing Posture

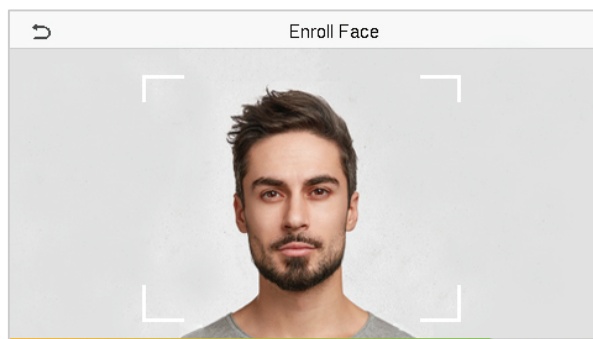


Facial Expression

NOTE: During enrolment and verification, please maintain natural facial expression and standing posture.

1.2 Face Registration

Try to keep the face in the centre of the screen during registration. Please face towards the camera and stay still during face registration. The screen should look like this:



Correct face registration and authentication method

● Recommendation for registering a face

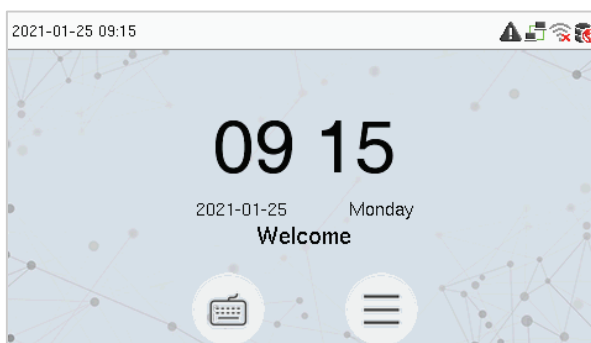
- ❖ When registering a face, maintain a distance of 40cm to 80cm between the device and the face.
- ❖ Be careful to keep your facial expression natural and not to change. (smiling, drawn face, wink, etc.)
- ❖ If you do not follow the instructions on the screen, the face registration may take longer or may fail.
- ❖ Be careful not to cover the eyes or eyebrows.
- ❖ Do not wear hats, masks, sunglasses, or eyeglasses.
- ❖ Be careful not to display two faces on the screen. Register one person at a time.
- ❖ It is recommended for a user wearing glasses to register both faces with and without glasses.

● Recommendation for authenticating a face

- ❖ Ensure that the face appears inside the guideline displayed on the screen of the device.
- ❖ Sometimes, authentication may fail due to the change in the wearing glasses then the one used while registration. In such a case, you may require authenticating your face with the previously worn glasses. If your face was registered without glasses, you should authenticate your face without glasses further.
- ❖ If a part of the face is covered with a hat, a mask, an eye patch, or sunglasses, authentication may fail. Do not cover the face, allow the device to recognize both the eyebrows and the face.

1.3 Standby Interface

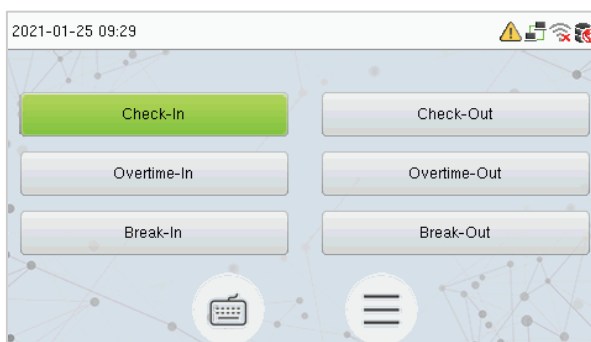
After connecting the power supply, the following standby interface is displayed:



- Click  to enter the User ID input interface.
- When there is no Super Administrator set in the device, tap  to go to the menu.
- After adding a Super Administrator on the device, it requires the Super Administrator's verification before entering the menu functions.

NOTE: For the security of the device, it is recommended to register super administrator the first time you use the device.

- ★The punch state options can also be displayed and used directly on the standby interface. Tap anywhere on the screen apart from the icons, and six shortcut keys appears on the screen, as shown in the figure below:



- Press the corresponding punch state key to select your current punch state, which is displayed in green.

NOTE: The punch state options are off by default and need to be changed to other option. Refer ["7.4 Punch States Options"](#) in order to get the punch state options on the standby screen.

1.4 Virtual Keyboard



NOTE:

The device supports the input in Chinese language, English language, numbers, and symbols.

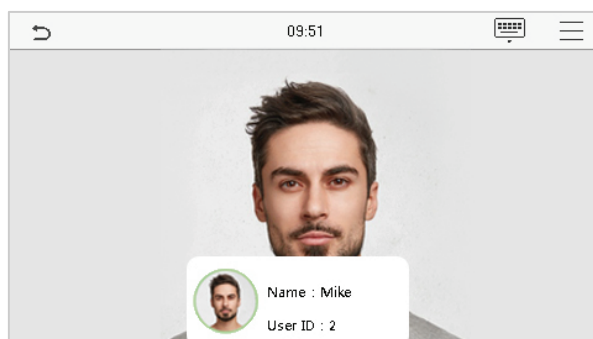
- Click [**En**] to switch to the English keyboard.
- Press [**123**] to switch to the numeric and symbolic keyboard.
- Tap [**ABC**] to return to the alphabetic keyboard.
- Tap the input box, virtual keyboard appears.
- Tap [**ESC**] to exit the virtual keyboard.

1.5 Verification Mode

1.5.1 Facial Verification

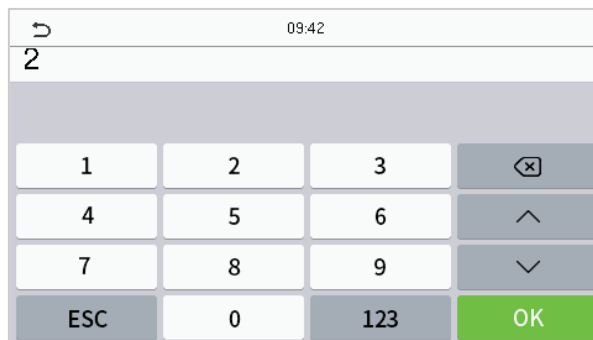
● 1:N Facial Verification

In this verification mode, the device compares the collected facial images with all face data registered in the device. The following is the pop-up prompt of a successful comparison result.



● 1:1 Facial Verification

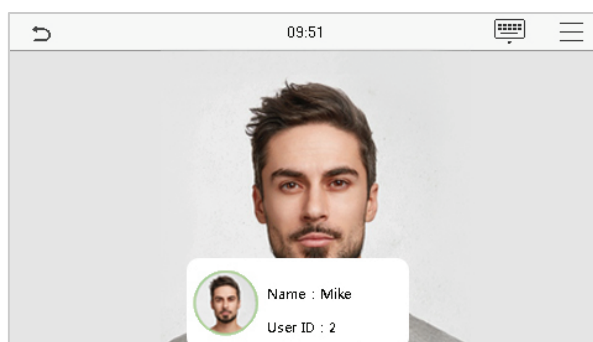
In this verification mode, the device compares the face captured by the camera with the facial template related to the entered user ID. Press  on the main interface and enter the 1:1 facial verification mode and enter the user ID and tap **[OK]**.



If the user has registered password and card in addition to his/her face, and the verification method is set to password/face/card verification, the following screen will appear. Select the  icon to enter the face verification mode.



After successful verification, the prompt box displays **"Successfully verified"**, as shown below:

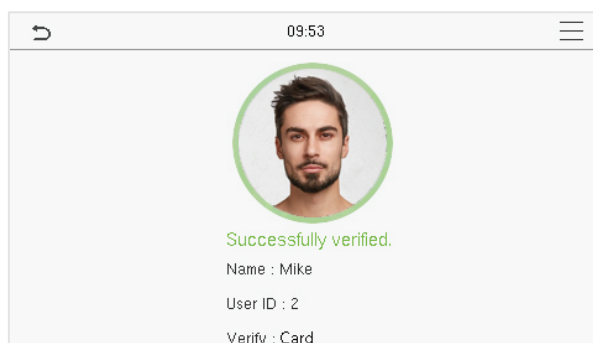


If the verification is failed, it prompts **"Please adjust your position!"**.

1.5.2 Card Verification

1:N Card Verification

The 1: N Card Verification mode compares the card number in the card induction area with all the card number data registered in the device; The following is the card verification screen.

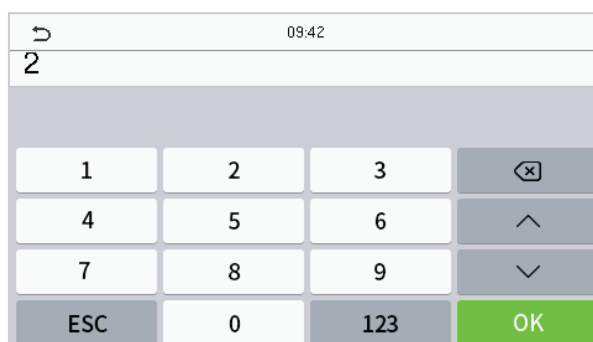


1:1 Card Verification

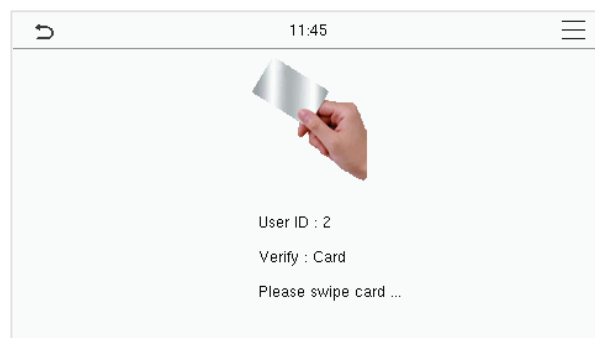
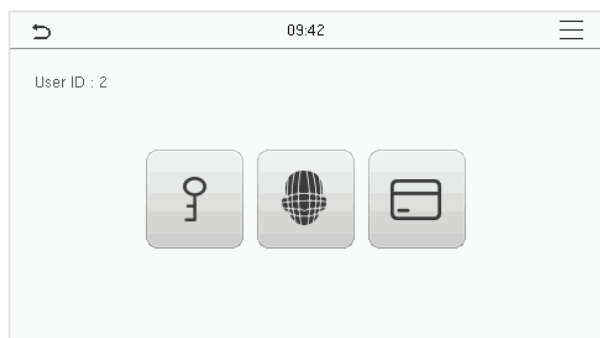
The 1:1 Card Verification mode compares the card number in the card induction area with the number associated with the employee's User ID registered in the device.

Press  in the main interface to open the 1:1 card verification mode.

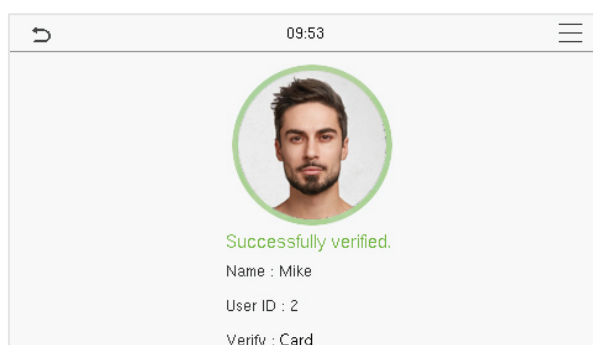
Enter the user ID and tap **[OK]**.



If the user has registered password and face in addition to his/her card, and the verification method is set to password/face/card verification, the following screen will appear. Select the  icon to enter the card verification mode.



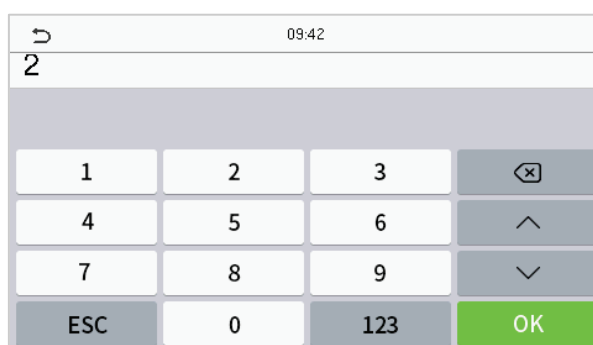
After successful verification, the prompt box displays **"Successfully verified"**, as shown below:



1.5.3 Password Verification

The device compares the entered password with the registered password by the given User ID.

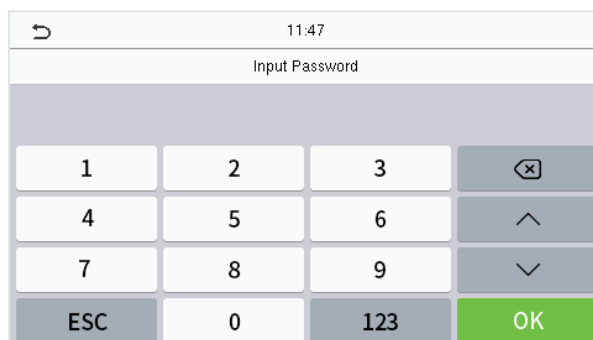
Click the  button on the main screen to enter the 1:1 password verification mode. Then, input the user ID and press [OK].



If the user has registered face and card in addition to password, and the verification method is set to password/face/card verification, the following screen will appear. Select the  icon to enter password verification mode.

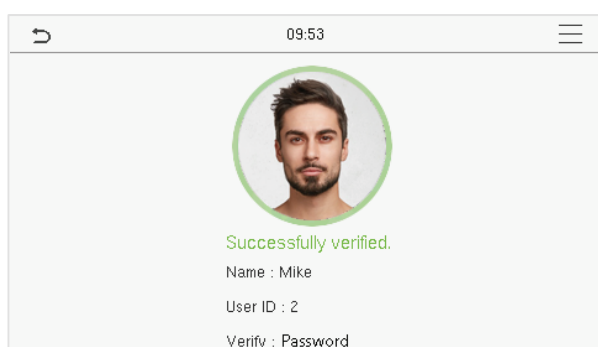


Input the password and press [OK].

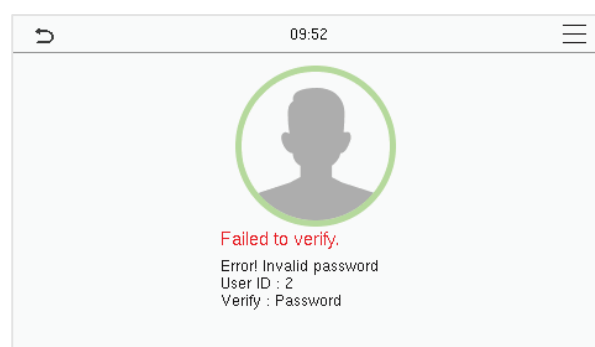


Following are the display screen after entering a correct password and a wrong password respectively.

Verification is successful:



Verification is failed:

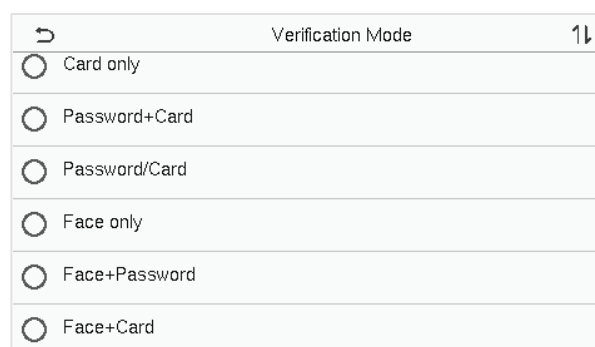
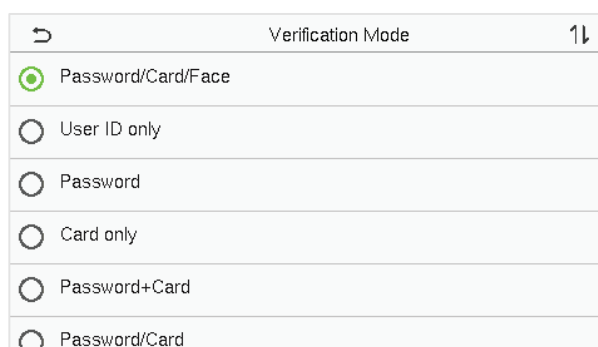


1.5.4 Combined Verification

For increased security and accessibility, the device offers the option of using multiple forms of verification methods. A total of 9 different verification combinations can be used, as shown below:

Combined Verification Symbol Definition

Definition		Explanation
/	or	This method compares the entered verification of a person with the related verification template previously stored to that Personnel ID in the Device.
+	and	This method compares the entered verification of a person with all the verification template previously stored to that Personnel ID in the Device.

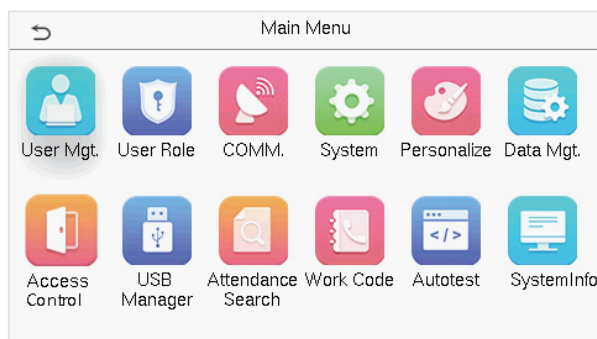


Procedure to set for Combined Verification Mode

- Combined verification requires personnel to register all the different verification method. Otherwise, employees will not be able to successfully verify through the combined verification process.
- For instance, when an employee has registered only the face data, but the device verification mode is set as "**Face + Password**", the employee will not be able to complete the verification process successfully.
- This is because the device compares the scanned face template of the person with registered verification template (both the Face and the Password) previously stored to that Personnel ID in the Device.
- But as the employee has registered only the Face but not the Password, the verification will not get completed and the Device displays "**Verification Failed**".

2 Main Menu

Press  on the Standby interface to enter the **Main Menu**, the following screen will be displayed:



Function Description

Menu	Descriptions
User Mgt.	To Add, Edit, View, and Delete basic information of a User.
User Role	To set the permission scope of the custom role and enroller for the users, that is, the rights to operate the system.
COMM.	To set the relevant parameters of Ethernet, PC Connection, Wireless Network★, Cloud Server Setting, and Network Diagnosis.
System	To set the parameters related to the system, including Date Time, Attendance, Face Parameter, Reset to factory and USB Upgrade.
Personalize	To customize settings of User Interface, Voice, Bell Schedules, Punch State Options, and Shortcut Key Mappings settings.
Data Mgt.	To delete all relevant data in the device.
Access Control	To set the parameters of the lock.
USB Manager	To upload or download the specific data by a USB drive.
Attendance Search	To query the specified Attendance Record, check Attendance Photo, and Blocklist ATT Photo.
Work Code	Set different type of work.
Autotest	To automatically test whether each module functions properly, including the LCD Screen, Audio, Camera, and real-time clock.
System Info	To view Data Capacity and Device and Firmware information of the current device.

3 User Management

3.1 User Registration

Click **User Mgt.** on the main menu.



3.1.1 User ID and Name

Tap **New User**. Enter the **User ID** and **Name**.

New User		1↓
User ID		3
Name		
User Role	Normal User	
Verification Mode	Password/Card/Face	
Face		0
Card Number		

New User		1↓
User Role	Normal User	
Verification Mode	Password/Card/Face	
Face		0
Card Number		
Password		
User Photo		0

Notes:

- 1) A name can take up to 36 characters.
- 2) The user ID may contain 1-9 digits by default.
- 3) During the initial registration, you can modify your ID, which can't be modified after registration.
- 4) If a message "**Duplicated!**" pops up, you must choose another ID as the enter User ID already exists.

3.1.2 User Role

On the New User interface, tap **User Role** to set the role for the user as either **Normal User** or **Super Admin**.

- **Super Admin:** The Super Administrator owns all management privileges in the device.

- **Normal User:** If the Super Admin is registered already in the device, then the Normal Users will not have the privilege to manage the system and can only access authentication verifications.
- **User Defined Roles:** The Normal User can also be assigned custom roles with **User Defined Role**. The user can be permitted to access several menu options as required.

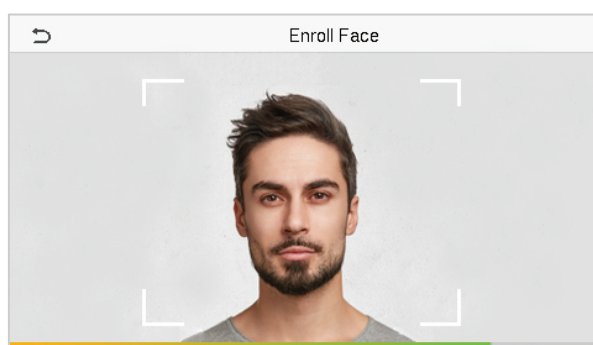


NOTE: If the selected user role is the Super Admin, the user must pass the identity authentication to access the main menu. The authentication is based on the authentication method(s) that the super administrator has registered. Please refer to [1.5 Verification Mode](#).

3.1.3 Face

Tap **Face** in the **New User** interface to enter the face registration page.

- Please face towards the camera and position yourself such that your face image fits inside the white guiding box and stay still during face registration.
- A progress bar shows up while registering the face and a **“Enrolled Successfully”** message is displayed as the progress bar completes.
- If the face is registered already then, the **“Duplicate Face”** message shows up. The registration interface is as follows:



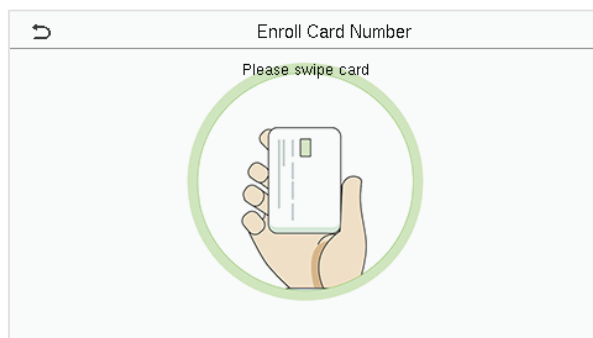
3.1.4 Card

Tap **Card** in the **New User** interface to enter the card registration page.

- On the Card interface, swipe the card underneath the card reading area. The card registration will

be successful.

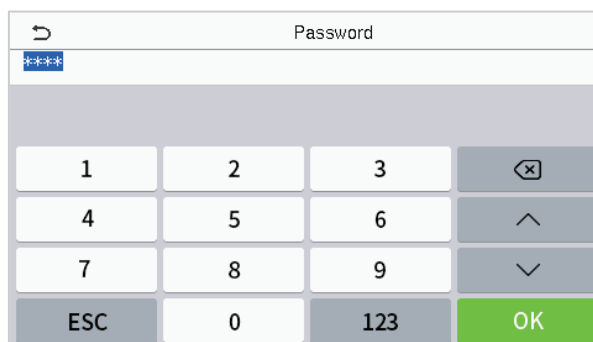
- If the card is registered already then, the **"Duplicate Card"** message shows up. The registration interface is as follows:



3.1.5 Password

Tap **Password** in the **New User** interface to enter the password registration page.

- On the Password interface, enter the required password and re-enter to confirm it and tap **OK**.
- If the re-entered password is different from the initially entered password, then the device prompts the message as **"Password not match!"**, where the user needs to confirm the password again.

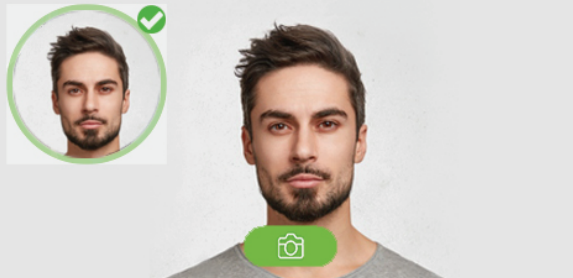


NOTE: The password may contain 1 to 8 digits by default.

3.1.6 User Photo

Tap on **User Photo** in the **New User** interface to go to the User Photo registration page.

New User	
User Role	Normal User
Verification Mode	Password/Card/Face
Face	0
Card Number	
Password	
User Photo	0

User Photo	
	

- When a user registered with a photo authenticates successfully, the registered photo is displayed.
- Tap **User Photo** to open the device's camera, then tap the camera icon to take a photo. The captured photo is displayed on the top left corner of the screen and the camera opens up again to take a new photo, after taking the initial photo.

NOTE: While registering a face, the system automatically captures a photo as the user photo. If you do not register a user photo, the system automatically sets the photo captured while registration as the default photo.

3.2 Search User

On the **Main Menu**, tap **User Mgt.**, and then tap **All Users** to search for a User.

- On the **All Users** interface, tap on the search bar on the user's list to enter the required retrieval keyword (where the keyword may be the user ID, surname, or full name) and the system will search for the related user information.

User Mgt.	
 New User	
 All Users	
 Display Style	

All Users		
1	Lucy	?
2	Mike	□ ? ⌂

3.3 Edit User

On the **All Users** interface, tap on the required user from the list and tap **Edit** to edit the user information.

☰	User : 2 Mike
Edit	
Delete	

☰	Edit : 2 Mike	⌵
User ID	2	
Name	Mike	
User Role	Normal User	
Verification Mode	Password/Card/Face	
Face	1	
Card Number	8503310	

NOTE: The process of editing the user information is the same as adding a new user, except that the User ID cannot be modified when editing a user. The process in detail refers to ["3 User Management"](#).

3.4 Delete User

On the **All Users** interface, tap on the required user from the list and tap **Delete** to delete the user or a specific user information from the device. On the **Delete** interface, tap on the required operation and then tap **OK** to confirm the deletion.

Delete Operations

Delete User: Deletes all the user information (deletes the selected User as a whole) from the device.

Delete Face Only: Deletes the face information of the selected user.

Delete Password Only: Deletes the password information of the selected user.

Delete User Photo Only: Deletes the photo of the selected user.

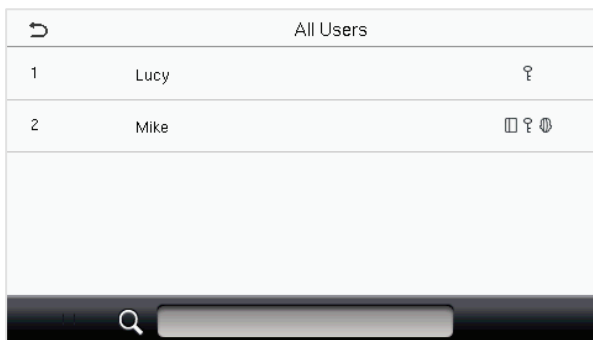
☰	Delete : 2 Mike
Delete User	
Delete Face Only	
Delete Password Only	
Delete User Photo Only	

3.5 Display Style

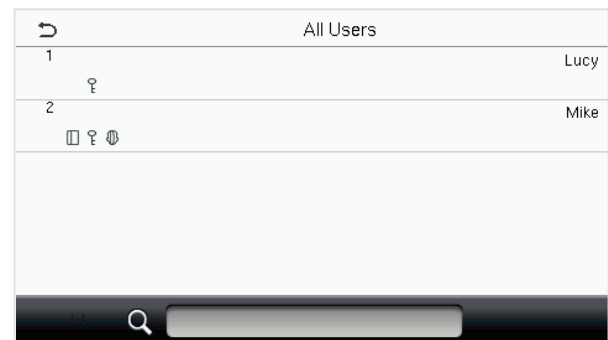
On the **Main Menu**, tap **User Mgt.**, and then tap **Display Style** to enter Display Style setting interface.



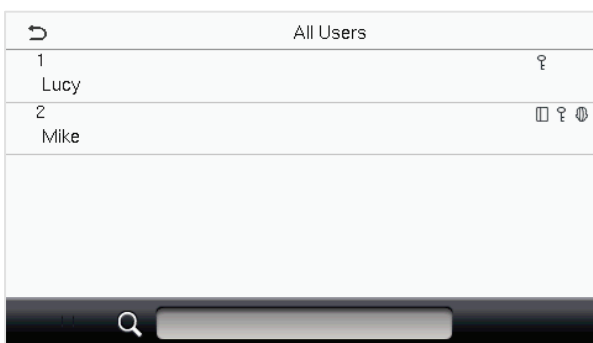
All the Display Styles are shown as below:



Single Line Style



Multiple Line Style

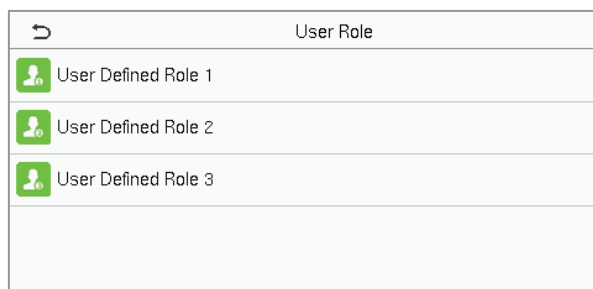


Mixed Line Style

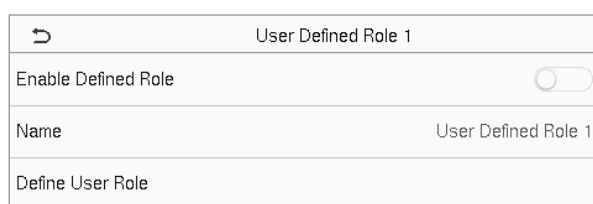
4 User Role

User Role facilitates assigning some specific permissions to certain users based on the requirement.

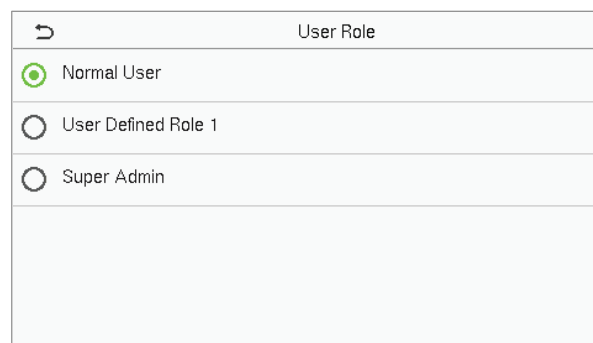
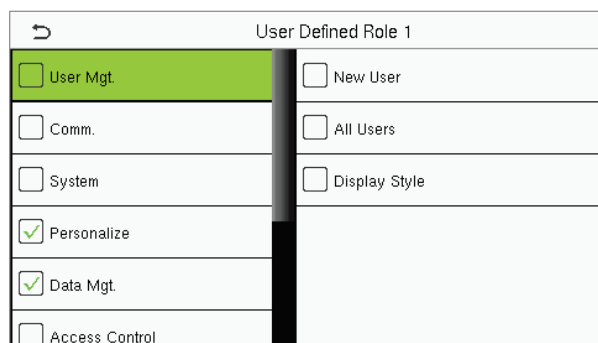
- On the **Main** menu, tap **User Role > User Defined Role** to set the user defined permissions.
- A total of 3 different custom roles can be added. It is the custom operating scope of a user.



- On the **User Defined Role** interface, toggle **Enable Defined Role** to enable or disable the user defined role.
- Tap on **Name** and enter the custom name of the role.



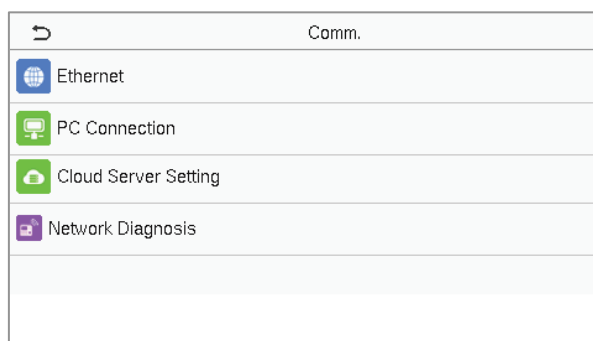
- Then, tap on **Define User Role** and select the required privileges to assign to the new role, and then tap on the **Return** button.
- During privilege assignment, the **Main Menu** function names are displayed on the left and its sub-menus are listed on its right.
- First, tap on the required **Main Menu** function name, and then select its required sub-menus from the list which the user can access.



NOTE: If the User Role is enabled for the device, tap on **User Mgt. > New User > User Role** to assign the created roles to the required users. But if there is no super administrator registered in the device, then the device will prompt "**Please enroll super admin first!**" when enabling the User Role function.

5 Communication Settings

Tap **COMM.** on the **Main Menu** to set the relevant parameters of Ethernet, PC Connection, Cloud Server, and Network Diagnosis.



5.1 Ethernet Settings

When the device needs to communicate with a PC over the Ethernet, you need to configure network settings and ensure that the device and the PC are connect to the same network segment.

Tap **Ethernet** on the **Comm.** Settings interface to configure the settings.

⏮	Ethernet	⏭
IP Address	192.168.163.99	
Subnet Mask	255.255.255.0	
Gateway	192.168.163.1	
DNS	0.0.0.0	
TCP COMM.Port	4370	
DHCP	☐	

⏮	Ethernet	⏭
Subnet Mask	255.255.255.0	
Gateway	192.168.163.1	
DNS	0.0.0.0	
TCP COMM.Port	4370	
DHCP	☐	
Display in Status Bar	☒	

Function Description

Function Name	Descriptions
IP Address	The default IP address is 192.168.1.201. It can be modified according to the network availability.
Subnet Mask	The default Subnet Mask is 255.255.255.0. It can be modified according to the network availability.
Gateway	The default Gateway address is 0.0.0.0. It can be modified according to the network availability.
DNS	The default DNS address is 0.0.0.0. It can be modified according to the network availability.

TCP COMM. Port	The default TCP COMM Port value is 4370. It can be modified according to the network availability.
DHCP	It stands for Dynamic Host Configuration Protocol. It dynamically allocates IP addresses for clients via server.
Display in Status Bar	Toggle to set whether to display the network icon on the status bar.

5.2 PC Connection

Comm Key facilitates to improve the security of data by setting the communication between the device and the PC. Once the Comm Key is set, a connection password is required to connect the device to the PC software.

Tap **PC Connection** on the **Comm.** settings interface to configure the communication settings.

PC Connection	
Comm Key	*****
Device ID	1

Function Description

Function Name	Descriptions
Comm Key	The default password is 0 and can be changed later. The Comm Key can contain 1-6 digits.
Device ID	It is the identification number of the device, which ranges between 1 and 254.

5.3 Cloud Server Setting

Tap **Cloud Server Setting** on the **Comm.** settings interface to connect with the ADMS server.

Cloud Server Setting	
Server Mode	ADMS
Enable Domain Name	☐
Server Address	0.0.0.0
Server Port	8081
Enable Proxy Server	☐
HTTPS	☐

Function Description

Function Name		Description
Enable Domain Name	Server Address	Once this function is turned ON , the domain name mode "http://..." will be used, such as http://www.XYZ.com, while "XYZ" denotes the domain name.
Disable Domain Name	Server Address	The IP address of the ADMS server.
	Server Port	Port used by the ADMS server.
Enable Proxy Server		The IP address and the port number of the proxy server is set manually when the proxy is enabled.
HTTPS		Based on HTTP, transmission encryption and identity authentication ensure the security of the transmission process.

5.4 Network Diagnosis

It helps to set the network diagnosis parameters.

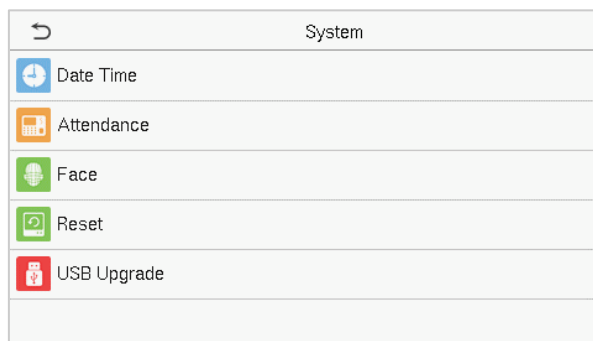
Tap **Network Diagnosis** on the **Comm.** settings interface. Enter the IP address that needs to be diagnosed and tap **Start the diagnostic test** to check whether the network can connect to the device.

Network Diagnosis	
IP address diagnostic test	0.0.0.0
Start the diagnostic test	

6 System Settings

It helps to set related system parameters to optimize the accessibility of the device.

Tap **System** on the **Main Menu** interface to get to its menu options.



6.1 Date Time

Tap **Date Time** on the **System** interface to set the date and time.



- Tap **Manual Date and Time** to manually set date and time and tap **Confirm** to save.
- Tap **24-Hour Time** to enable or disable this format. If enabled, then select the **Date Format** to set the date format i.e., the way date should be displayed on the device.
- Tap **Daylight Saving Time** to enable or disable the function. If enabled, tap **Daylight Saving Mode** to select a daylight-saving mode and then tap **Daylight Saving Setup** to set the switch time.

Daylight Saving Setup	
Start Month	1
Start Week	1
Start Day	Sunday
Start Time	00:00
End Month	1
End Week	1

Week Mode

Daylight Saving Setup	
Start Date	00-00
Start Time	00:00
End Date	00-00
End Time	00:00

Date Mode

- When restoring the factory settings, the time (24-hour) and date format (YYYY-MM-DD) can be restored, but the device date and time cannot be restored.

NOTE: For example, the user sets the time of the device (18:35 on March 15, 2019) to 18:30 on January 1, 2020. After restoring the factory settings, the time of the equipment will remain 18:30 on January 1, 2020.

6.2 Attendance

Click **Attendance** on the System interface.

	Attendance	
Duplicate Punch Period(m)	1	
Camera Mode	No photo	
Display User Photo		
Attendance Log Alert	99	
Periodic Del of ATT Data	Disabled	
Periodic Del of ATT Photo	99	

	Attendance	
Attendance Log Alert	99	
Periodic Del of ATT Data	Disabled	
Periodic Del of ATT Photo	99	
Periodic Del of Blocklist Photo	Disabled	
Authentication Timeout(s)	3	
Face comparison interval(s)	1	

Function Description

Function Name	Description
Duplicate Punch Period(m)	Within a set time period (unit: minutes), the duplicated attendance record will not be reserved (value ranges from 1 to 999999 minutes).
Camera Mode	Choose whether to capture and save the current snapshot image during verification. There are 5 modes: No Photo: No photo is taken during user verification. Take photo, no save: Photo is taken but not saved during verification. Take photo and save: Photo is taken and saved during verification. Save on successful verification: Photo is taken and saved for each successful verification. Save on failed verification: Photo is taken and saved only for each failed verification.
Display User Photo	Choose whether to display the user photo when the user passes the verification.
Attendance Log Alert	When the record space of the attendance reaches the maximum threshold value, the device automatically displays the memory space warning. Users may disable the function or set a valid value between 1 and 9999.

Periodic Del of ATT Data	When attendance records reach its maximum storage capacity, the device automatically deletes a set of old attendance records. Users may disable the function or set a valid value between 1 and 999.
Periodic Del of ATT Photo	When attendance photos reach its maximum storage capacity, the device automatically deletes a set of old attendance photos. Users may disable the function or set a valid value between 1 and 99.
Periodic Del of Blocklist Photo	When block listed photos reach its maximum storage capacity, the device automatically deletes a set of old block listed photos. Users may disable the function or set a valid value between 1 and 99.
Authentication Timeout(s)	The amount of time taken to display a successful verification message. Valid value: 1~9 seconds.
Face comparison interval (s)	The amount of time required to compare facial templates. Valid value: 0~9 seconds.

6.3 Face Parameters

Tap **Face** on the **System** interface to go to the face parameter settings.

	Face	1↓
1:N Threshold Value		47
1:1 Threshold Value		63
Face Enrollment Threshold		70
Face Pitch Angle		30
Face Rotation Angle		25
Image Quality		70

	Face	1↓
Minimum Face Size		80
LED Light Trigger Value		80
Motion Detection Sensitivity		4
Live Detection		☒
Live Detection Threshold		70
Anti-spoofing using NIR		☒

	Face	1↓
LED Light Trigger Value		80
Motion Detection Sensitivity		4
Live Detection		☒
Live Detection Threshold		70
Anti-spoofing using NIR		☒
Face Algorithm		

Function Description

Function Name	Description
1:N Threshold Value	Under 1:N verification mode, the verification will only be successful when the similarity between the acquired facial image and all registered facial templates is greater than the set value. The valid value ranges from 0 to 100. The higher the thresholds, the lower the misjudgement rate and the higher the rejection rate, and vice versa. It is recommended to set the default value of 47.
1:1 Threshold Value	Under 1:1 verification mode, the verification will only be successful when the similarity between the acquired facial image and the user's facial templates enrolled in the device is greater than the set value. The valid value ranges from 0 to 100. The higher the thresholds, the lower the misjudgement rate and the higher the rejection rate, and vice versa. It is recommended to set the default value of 63.
Face Enrollment Threshold	During face enrollment, 1:N comparison is used to determine whether the user has already registered before. When the similarity between the acquired facial image and all registered facial templates is greater than the set threshold, it indicates that the face has already been registered.
Face Pitch Angle	It is the pitch angle tolerance of a face for facial template registration and comparison. If a face's pitch angle exceeds the set value, it will be filtered by the algorithm, i.e., ignored by the terminal thus no registration and comparison interface will be triggered.
Face Rotation Angle	It is the rotation angle tolerance of a face for facial template registration and comparison. If a face's rotation angle exceeds the set value, it will be filtered by the algorithm, i.e., ignored by the terminal thus no registration and comparison interface will be triggered.
Image Quality	It is the image quality for facial registration and comparison. The higher the value, the clearer image is required.

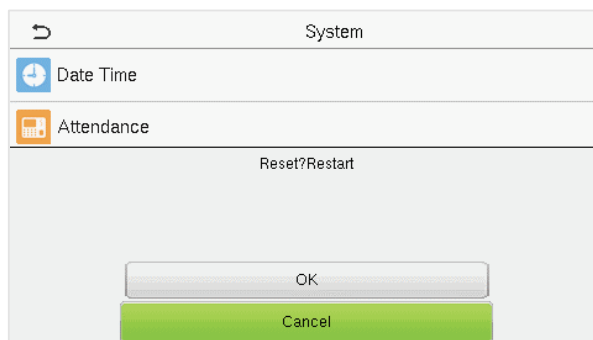
Minimum Face Size	It sets the minimum face size required for facial registration and comparison. If the minimum size of the captured image is smaller than the set value, then it will be filtered out and not recognized as a face. This value can also be interpreted as the face comparison distance. The farther the individual is, the smaller the face, and the smaller number of pixels of the face obtained by the algorithm. Therefore, adjusting this parameter can adjust the farthest comparison distance of faces. When the value is 0, the face comparison distance is not limited.
LED Light Triggered Value	This value controls the turning on and off of the LED light. The larger the value, the LED light will turn on or off more frequently.
Motion Detection Sensitivity	It sets the value for the amount of change in a camera's field of view known as potential motion detection that wakes up the terminal from standby to the comparison interface. The larger the value, the more sensitive the system would be, i.e., if a larger value is set, the comparison interface activates with much ease, and the motion detection is frequently triggered.
Live Detection	It detects the spoof attempt using visible light images to determine if the provided biometric source sample is of a real person (a live human being) or a false representation.
Live Detection Threshold	It facilitates judging whether the captured visible image is a real person (a live human being). The larger the value, the better the anti-spoofing performance using visible light.
Anti-spoofing using NIR	It uses near-infrared spectra imaging to identify and prevent fake photos and videos attack.
Face Algorithm	It has facial algorithm related information and pause facial template update.

NOTE: Improper adjustment of the exposure and quality parameters may severely affect the performance of the device. Please adjust the exposure parameter only under the guidance of the after-sales service personnel of our company.

6.4 Factory Reset

The Factory Reset function restores the device settings such as communication settings and system settings, to the default factory settings (this function does not clear registered user data).

Tap **Reset** on the **System** interface and then tap **OK** to restore the default factory settings.



6.5 USB Upgrade

With this option, the device firmware can be upgraded by using the upgrade file on a USB disk. Before conducting this operation, ensure that the USB disk is properly inserted into the device and contains the correct upgrade file.

If no USB disk is plugged in, the system gives the following prompt after you tap **USB Upgrade** on the **System** interface.



NOTE: If an upgrade file is required, please contact our technical support. A firmware upgrade is not recommended under normal circumstances.

7 Personalize Settings

Tap **Personalize** on the **Main Menu** interface to customize interface settings, voice, bell, punch state options, and shortcut key mappings.

	Personalize
	User Interface
	Voice
	Bell Schedules
	Punch State Options
	Shortcut Key Mappings

7.1 Interface Settings

Tap **User Interface** on the **Personalize** interface to customize the display style of the main interface.

	User Interface
Wallpaper	
Language	English
Menu Screen Timeout(s)	Disabled
Idle Time to Slide Show(s)	None
Slide Show Interval(s)	Disabled
Idle Time to Sleep(m)	Disabled

	User Interface
Language	English
Menu Screen Timeout(s)	Disabled
Idle Time to Slide Show(s)	None
Slide Show Interval(s)	Disabled
Idle Time to Sleep(m)	Disabled
Main Screen Style	Style 1

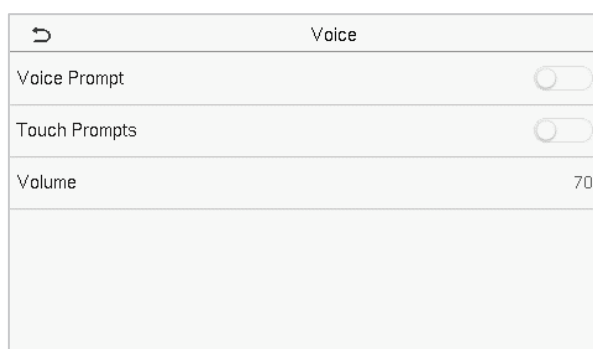
Function Description

Function Name	Description
Wallpaper	It helps to select the main screen wallpaper according to the user preference.
Language	It helps to select the language of the device.
Menu Screen Timeout (s)	When there is no operation, and the time exceeds the set value, the device automatically goes back to the initial interface. The function can either be disabled or set the required value between 60 and 99999 seconds.
Idle Time To Slide Show (s)	When there is no operation, and the time exceeds the set value, a slide show is displayed. The function can be disabled, or you may set the value between 3 and 999 seconds.

Slide Show Interval (s)	It is the time interval in switching between different slide show pictures. The function can be disabled, or you may set the interval between 3 and 999 seconds.
Idle Time to Sleep (m)	If the sleep mode is activated, and when there is no operation in the device, then the device will enter standby mode. Press any key or finger to resume normal working mode. This function can be disabled or set a value within 1-999 minutes.
Main Screen Style	It helps selecting the main screen style according to the user preference.

7.2 Voice Settings

Tap **Voice** on the **Personalize** interface to configure the voice settings.

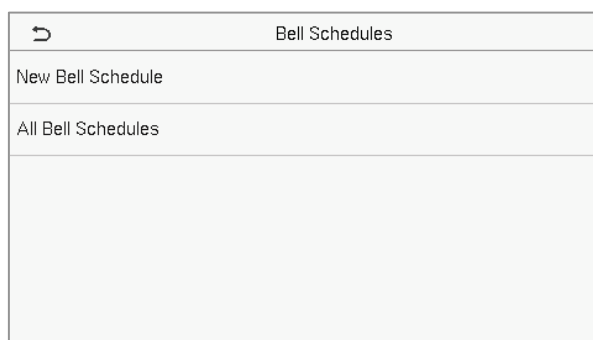


Function Description

Function Name	Description
Voice Prompt	Toggle to enable or disable the voice prompts during function operations.
Touch Prompt	Toggle to enable or disable the keypad sounds.
Volume	Adjust the volume of the device which can be set between 0-100.

7.3 Bell Schedules

Tap **Bell Schedules** on the **Personalize** interface to configure the Bell settings.



New Bell Schedule

Tap **New Bell Schedule** on the **Bell Schedule** interface to add a new bell schedule.

New Bell Schedule	
Bell Status	☐
Bell Time	
Repeat	Never
Ring Tone	bell01.wav
Internal bell delay(s)	5

Function Description

Function Name	Description
Bell Status	Toggle to enable or disable the bell status.
Bell Time	Once the required time is set, the device will automatically trigger to ring the bell during that time.
Repeat	Set the required number of counts to repeat the scheduled bell.
Ring Tone	Select a ring tone.
Internal bell delay(s)	Set the replay time of the internal bell. Valid values ranges from 1 to 999 seconds.

All Bell Schedules

Once the bell is scheduled, on the **Bell Schedules** interface, tap **All Bell Schedules** to view the newly scheduled bell.

Bell Schedules
New Bell Schedule
All Bell Schedules

All Bell Schedules
05:01 PM 
06:01 PM 
07:02 PM 

Edit the scheduled bell

On the **All Bell Schedules** interface, tap on the required bell schedule, and tap **Edit** to edit the selected bell schedule. The editing method is the same as the operations of adding a new bell schedule.

17:01	
Edit	
Delete	

Edit	
Bell Status	☒
Bell Time	05:01 PM
Repeat	Never
Ring Tone	bell01.wav
Internal bell delay(s)	5

Delete a bell

On the **All Bell Schedules** interface, tap the required bell schedule, and tap **Delete**, and then tap **Yes** to delete the selected bell.

18:01	
Edit	
Delete	

17:01	
Edit	
Delete	
Are you sure to execute?	
Yes <input checked="" type="button" value="No"/>	

7.4 Punch States Options

Tap **Punch States Options** on the **Personalize** interface to configure the punch state settings.

Punch State Options	
Punch State Mode	Off

Punch State Mode	
☒ Off	
☐ Manual Mode	
☐ Auto Mode	
☐ Manual and Auto Mode	
☐ Manual Fixed Mode	
☐ Fixed Mode	

Function Description

Function Name	Description
Punch State Mode	Off: It disables the punch state function. And the punch state key set under the Shortcut Key Mappings menu becomes invalid. Manual Mode: Switch the punch state key manually, and the punch state key will disappear after Punch State Timeout. Auto Mode: The punch state key will automatically switch to a specific punch status according to the predefined schedule which can be set in the Shortcut Key Mappings. Manual and Auto Mode: The main interface will display the auto-switch punch state key. However, the users will still be able to select an alternative that is the manual attendance status. After timeout, the manual switching punch state key will become auto-switch punch state key. Manual Fixed Mode: After the punch state key is set manually to a particular punch status, the function will remain unchanged until being manually switched again. Fixed Mode: Only the manually fixed punch state key is shown. Users cannot change the status by pressing any other keys.

7.5 Shortcut Key Mappings

Users may define shortcut keys for attendance status and functional keys on the main interface. So, on the main interface, when the shortcut keys are pressed, the corresponding attendance status or the function interface displays directly.

Tap **Shortcut Key Mappings** on the **Personalize** interface to set the required shortcut keys.

Shortcut Key Mappings	
Up Key	Check-In
Down Key	Check-Out
Left Key	Overtime-In
Right Key	Overtime-Out
ESC/[-> Key	Break-In
M/OK/[->] Key	Break-Out

- On the **Shortcut Key Mappings** interface, tap on the required shortcut key to configure the shortcut key settings.
- On the **Shortcut Key** (that is "Up Key") interface, tap **function** to set the functional process of the shortcut key either as punch state key or function key.
- If the Shortcut key is defined as a function key (such as New user, All users, etc.), the configuration is done as shown in the image below.

Up Key	
Punch State Value	0
Function	Punch State Options
Name	Check-In

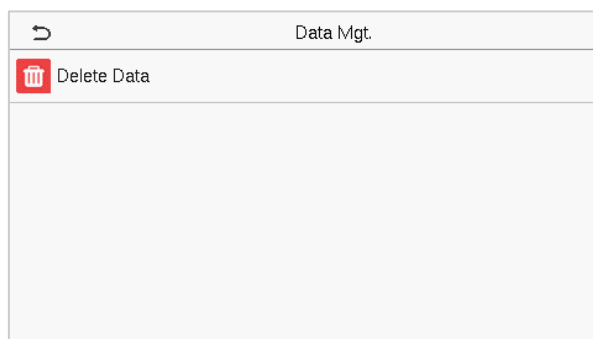
Up Key	
Function	New User

- If the Shortcut key is set as a punch state key (such as check in, check out, etc.), then it is required to set the punch state value (valid value 0~250), name.

NOTE: When the function is set to Undefined, the device will not enable the punch state key.

8 Data Management

On the **Main Menu**, tap **Data Mgt.** to delete the relevant data in the device.



8.1 Delete Data

Tap **Delete Data** on the **Data Mgt.** interface to delete the required data.

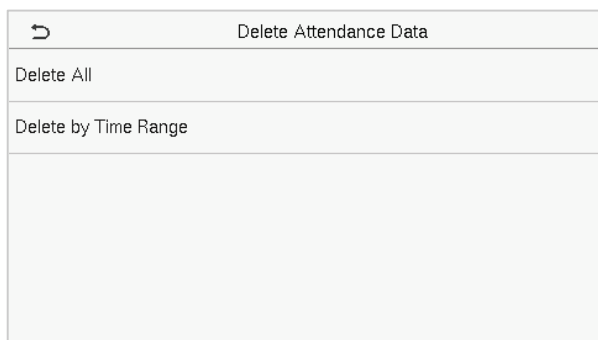
	Delete Data	1↓
	Delete Attendance Data	
	Delete Attendance Photo	
	Delete Blocklist Photo	
	Delete All Data	
	Delete Admin Role	
	Delete User Photo	

	Delete Data	1↓
	Delete Blocklist Photo	
	Delete All Data	
	Delete Admin Role	
	Delete User Photo	
	Delete Wallpaper	
	Delete Screen Savers	

Function Description

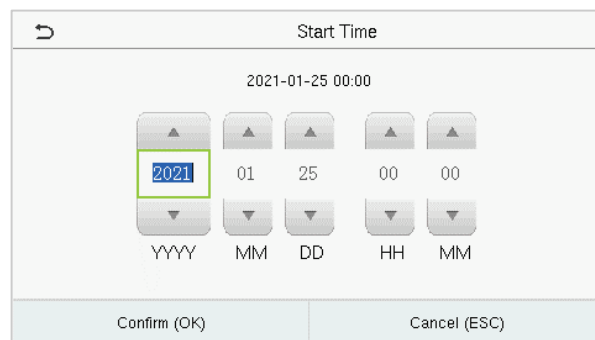
Function Name	Description
Delete Attendance Data	To delete attendance records conditionally.
Delete Attendance Photo	To delete attendance photos of designated personnel.
Delete Blocklist Photo	To delete the photos taken during failed verifications.
Delete All Data	To delete information and attendance records of all registered users.
Delete Admin Role	To remove all administrator privileges.
Delete User Photo	To delete all user photos in the device.
Delete Wallpaper	To delete all wallpapers in the device.
Delete Screen Savers	To delete the screen savers in the device.

NOTE: The user may select Delete All or Delete by Time Range when deleting the attendance records, attendance photos, or block listed photos. When selecting Delete by Time Range, you need to set a time range to delete all data within the specified time.



A screenshot of a menu titled "Delete Attendance Data". It contains two options: "Delete All" and "Delete by Time Range". The "Delete by Time Range" option is highlighted with a light blue background.

Select Delete by Time Range

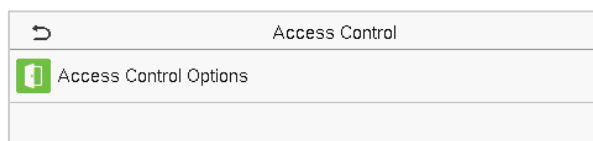


A screenshot of a screen titled "Start Time". It displays a date and time picker for "2021-01-25 00:00". The year "2021" is highlighted with a green box. Below the date and time are labels: "YYYY", "MM", "DD", "HH", and "MM". At the bottom, there are two buttons: "Confirm (OK)" and "Cancel (ESC)".

Set the time range and click **OK**.

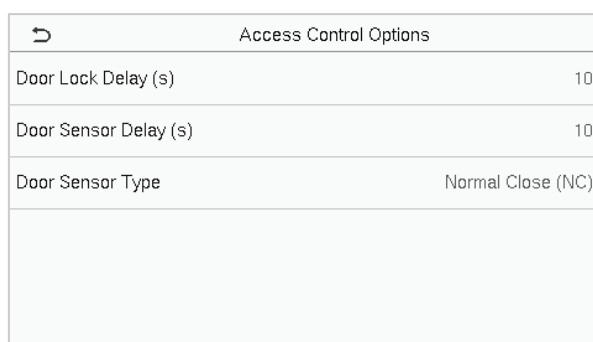
9 Access Control

On the **Main Menu**, tap **Access Control** to set the schedule of lock.



9.1 Access Control Options

Tap **Access Control Options** on the **Access Control** interface to set the parameters of the control lock of the terminal and related equipment.



Function Description

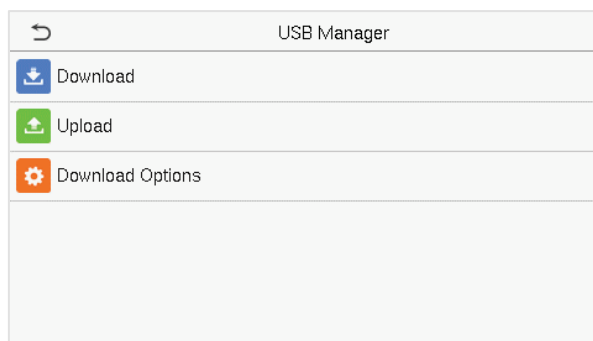
Function Name	Description
Door Lock Delay (s)	The amount of time that the device controls the electric lock to be in unlock state. Valid value: 1~10 seconds; 0 seconds represents disabling the function.
Door Sensor Delay (s)	An alarm is triggered if the door is not closed within a deýned time (Door Sensor Delay). The valid value of Door Sensor Delay ranges from 1 to 255 seconds.
Door Sensor Type	There are three Sensor types: None , Normal Open , and Normal Closed . None : It means the door sensor is not in use. Normal Open : The door is always open when electric power is on. Normal Closed : The door is always close when electric power is on.

10 USB Manager

You can import the user information, work code, and attendance data in the device to match the attendance for processing by using a USB disk or import the user information and work code to other fingerprint devices for backup.

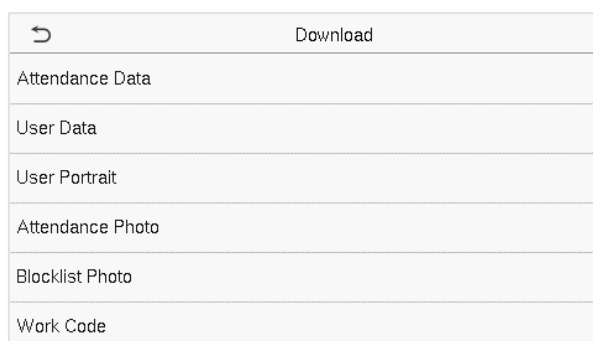
NOTE: Before uploading/downloading data from/to the USB disk, insert the USB disk into the USB slot first.

Tap **USB Manager** on the main menu interface.



10.1 Download

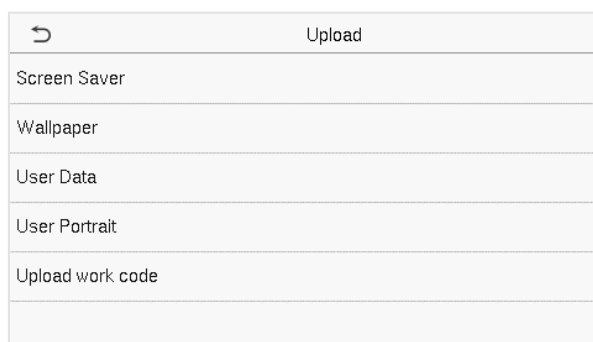
Tap **Download** on the **USB Manager** interface.



Function Name	Description
Attendance Data	To download attendance data in a specified time into a USB disk.
User Data	To download all user information from the device into a USB disk.
User Portrait	To download all user photos from the device into a USB disk.
Attendance Photo	To download all attendance photos from the device into a USB disk.
Blocklist Photo	To download all block listed photos (photos taken after failed verifications) from the device into a USB disk.
Work Code	To save the work code in the device to a USB disk.

10.2 Upload

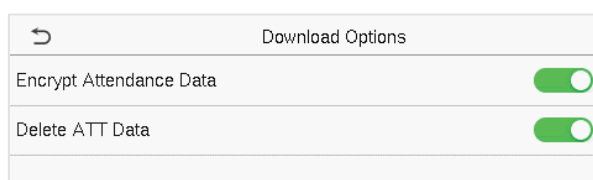
Tap **Upload** on the **USB Manager interface**.



Function Name	Description
Screen Saver	To upload all screen savers from USB disk into the device. You can choose Upload selected photo or Upload all photos . The images will be displayed on the device's main interface once uploaded. Create a folder named " advertise " in the root directory of the USB disk and put the advertising photos in this directory before uploading.
Wallpaper	To upload all wallpapers from USB disk into the device. You can choose Upload selected photo or Upload all photos . The images will be displayed on the screen once uploaded. Create a folder named " wallpaper " in the root directory of the USB disk and put the wallpaper photos in this directory before uploading.
User Date	To upload all the user information from the USB disk into the device.
User Portrait	To upload all user photos from a USB disk into the device.
Upload Work Code	To upload work code from a USB disk into the device.

10.3 Download Options

Tap **Download Options** on the **USB Manager interface**.

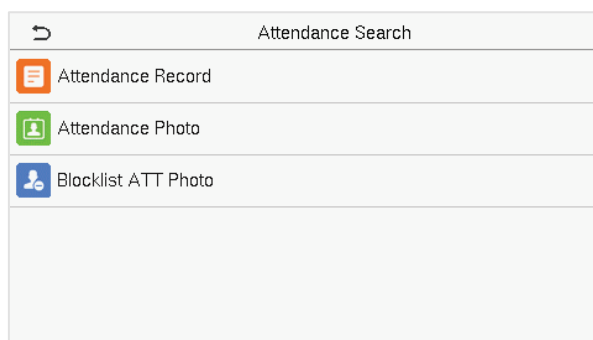


Function Name	Description
Encrypt Attendance Date	The attendance data is encrypted during the uploading and downloading.
Delete ATT Data	After successful downloading, the attendance data on the device is deleted.

11 Attendance Search

Once the identity of a user is verified, the Attendance Record is saved in the device. This function enables users to check their access records.

Click **Attendance Search** on the **Main Menu** interface to search for the required Attendance Record.



The process of searching for attendance and blocklist photos is similar to that of searching for Attendance Record. The following is an example of searching for Attendance Record.

On the **Attendance Search** interface, tap **Attendance Record** to search for the required record.

1. Enter the user ID to be searched and click **OK**.
For the records of all users, click **OK** without entering any user ID.
2. Select the time range within which the logs need to be searched.

The screenshot shows a mobile application interface titled "User ID". It has a text input field with the placeholder text "Please Input(query all data without input)". Below the input field is a numeric keypad with buttons for digits 1-9, 0, and an "ESC" button. There are also navigation buttons: a back arrow, a delete button (X), and up/down arrows. A green "OK" button is at the bottom right.

The screenshot shows a mobile application interface titled "Time Range". It has a list of radio button options: "Today", "Yesterday", "This week", "Last week", "This month", and "Last month". The "Today" option is selected. A "1↓" icon is at the top right.

3. Once the log search succeeds, tap the record highlighted in green to view its details.
4. The below figure shows the details of the selected record.

The screenshot shows a mobile application interface titled "Personal Record Search". It displays a table with columns: Date, User ID, and Time. The first row is highlighted in green.

Date	User ID	Time
01-25		Number of Records:04
	2	09:58 09:53 09:51 09:48
01-22		Number of Records:09
	1	16:17 16:01 15:57
	2	16:17 16:09 16:02 16:01 15:58 15:57

The screenshot shows a mobile application interface titled "Personal Record Search". It displays a table with columns: User ID, Name, Time, Mode, and State. The first row is highlighted in green.

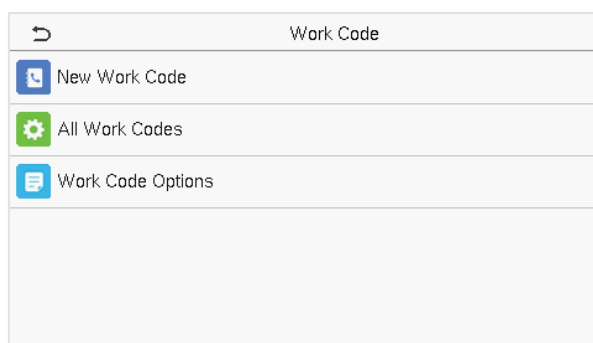
User ID	Name	Time	Mode	State
1	Lucy	01-22 16:17	15	255
1	Lucy	01-22 16:01	15	255
1	Lucy	01-22 15:57	15	255

Verification Mode : Face Punch State : 255

12 Work Code

Employees' salaries are subject to their attendance records. An employee can be engaged in more than one type of work which may vary with time. As the pay varies according to the work types, the FFR terminal provides a parameter to indicate the corresponding work type for every attendance record to facilitate rapid understanding of different attendance situations during the handling of attendance data.

On the **Main Menu**, tap **Work Code** to set the work code.



12.1 Add a Work Code

New Work Code	
ID	1
Name	

Function Description

Function Name	Description
ID	It is the digital code of the work code. Users may set a valid value between 1 and 99999999.
Name	It is the naming of the work code.

12.2 All Work Codes

You can view, edit and delete work codes in All Work Codes. The process of editing a work code is the same as adding a work code, except that the ID is not allowed to be modified.

All Work Codes	
1	Public
2	OT
3	Developer
4	Design

3	
Edit	
Delete	

12.3 Work Code Options

To set whether entering the work code is a must and whether the entered work code must exist during authentication.

Work Code Options	
Work Code Required	☐
Work Code Must Defined	☐

Work Code Options	
Work Code Required	☒
Input Screen Timeout(s)	5
Work Code Must Defined	☒

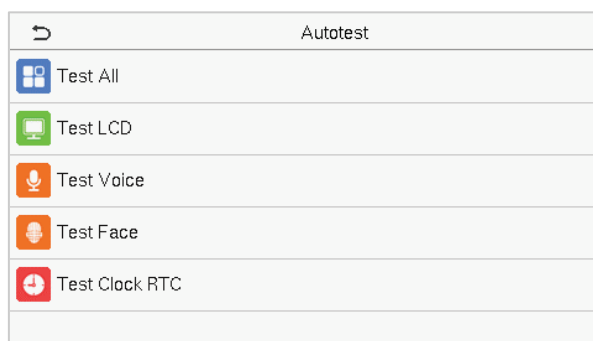
In **1: N** or **1:1** verification, the system will automatically pop up the following window. Select the corresponding Word Code manually to verify successfully.

Work Code	
1	Public
2	OT
3	Developer
4	Design

09:53	
 Successfully verified. Name : Mike User ID : 2 Verify : Card	

13 Autotest

On the Main Menu, tap Autotest to automatically test whether all modules in the device function properly, including the LCD, Voice, Camera, and Real-Time Clock (RTC).

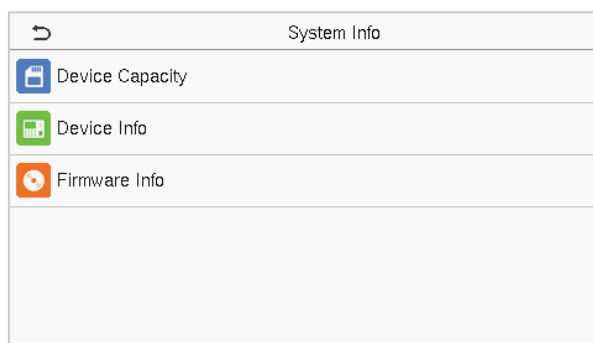


Function Description

Function Name	Description
Test All	To automatically test whether the LCD, Audio, Camera and RTC are working normally.
Test LCD	To automatically test the display of the LCD screen by displaying all the color bands including pure white and pure black to check whether the screen displays the colors accurately.
Test Voice	To automatically test whether the audio files stored in the device are complete and the voice quality is good.
Test Face	To test if the camera functions properly it checks the photos taken and determines if they are clear enough.
Test Clock RTC	To test the RTC. The device checks whether the clock works normally and accurately with a stopwatch. Touch the screen to start counting and press it again to stop counting.

14 System Information

On the **Main Menu**, tap **System Info** to view the storage status, the version information of the device, and firmware information.



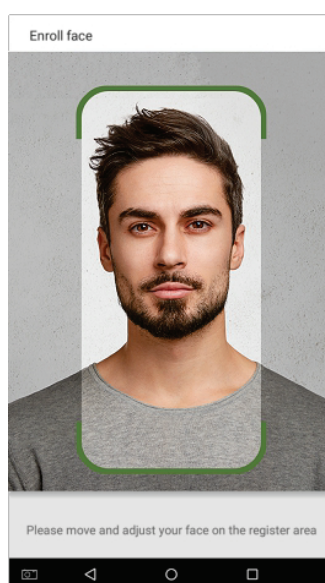
Function Description

Function Name	Description
Device Capacity	Displays the current device's user storage, password, face and card★ storage, administrators, attendance records, attendance and blocklist photos, and user photos.
Device Info	Displays the device's name, serial number, MAC address, face algorithm, version information, platform information, manufacturer, and manufacture date.
Firmware Info	Displays the firmware version and other version information of the device.

Appendix 1

Requirements of Live Collection and Registration of Visible Light Face Images

- 1) It is recommended to perform registration in an indoor environment with an appropriate light source without underexposure or overexposure on the face.
- 2) Do not place the device towards outdoor light sources like door or window or other harsh light sources.
- 3) Dark-color apparels other than the background color is recommended for registration.
- 4) Expose your face and forehead properly and do not cover your face and eyebrows with your hair.
- 5) It is recommended to show a normal facial expression. (A smile is acceptable, but do not close your eyes, or incline your head to any orientation).
- 6) Two images are required for a person with eyeglasses, one image with eyeglasses and the other without them.
- 7) Do not wear accessories like a scarf or mask that may cover your mouth or chin.
- 8) Please face right towards the capturing device and locate your face in the image capturing area as shown in the image below.
- 9) Do not include more than one face in the capturing area.
- 10) A distance of 50cm to 80cm is recommended for capturing the image (the distance is adjustable, subject to body height).



Requirements for Visible Light Digital Face Image Data

The digital photo should be straight-edged, colored, half-portrayed with only one person, and the person should be uncharted and in casuals. Persons who wear eyeglasses should remain to put on eyeglasses for getting photo captured.

- **Eye Distance**

200 pixels or above are recommended with no less than 115 pixels of distance.

- **Facial Expression**

A neutral face or smile with eyes naturally open are recommended.

- **Gesture and Angel**

The horizontal rotating angle should not exceed $\pm 10^\circ$, elevation should not exceed $\pm 10^\circ$, and depression angle should not exceed $\pm 10^\circ$.

- **Accessories**

Masks or coloured eyeglasses are not allowed. The frame of the eyeglasses should not cover the eyes and should not reflect light. For persons with thick eyeglasses frames, it is recommended to capture two images, one with eyeglasses and the other one without them.

- **Face**

Complete face with clear contour, real scale, evenly distributed light, and no shadow.

- **Image Format**

Should be in BMP, JPG or JPEG.

- **Data Requirement**

Should comply with the following requirements:

- 1) White background with dark-colored apparel.
- 2) 24bit true color mode.
- 3) JPG format compressed image with not more than 20kb size.
- 4) Resolution should be between 441 x 358 to 1920 x 1080.
- 5) The vertical scale of head and body should be in a ratio of 2:1.
- 6) The photo should include the captured person's shoulders at the same horizontal level.
- 7) The captured person's eyes should be open and with a clearly seen iris.
- 8) A neutral face or smile is preferred, showing teeth is not preferred.
- 9) The captured person should be easily visible, natural in color, no harsh shadow or light spot or reflection in the face or background. The contrast and lightness level should be appropriate.

Eco-friendly Operation



The product's "eco-friendly operational period" refers to the time during which this product will not discharge any toxic or hazardous substances when used in accordance with the prerequisites in this manual.

The eco-friendly operational period specified for this product does not include batteries or other components that are easily worn down and must be periodically replaced. The battery's eco-friendly operational period is 5 years.

Hazardous or Toxic substances and their quantities

Component Name	Hazardous/Toxic Substance/Element					
	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr6+)	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
Chip Resistor	×	○	○	○	○	○
Chip Capacitor	×	○	○	○	○	○
Chip Inductor	×	○	○	○	○	○
Diode	×	○	○	○	○	○
ESD component	×	○	○	○	○	○
Buzzer	×	○	○	○	○	○
Adapter	×	○	○	○	○	○
Screws	○	○	○	×	○	○

○ indicates that the total amount of toxic content in all the homogeneous materials is below the limit as specified in SJ/T 11363—2006.

× indicates that the total amount of toxic content in all the homogeneous materials exceeds the limit as specified in SJ/T 11363—2006.

Note: 80% of this product's components are manufactured using non-toxic and eco-friendly materials. The components which contain toxins or harmful elements are included due to the current economic or technical limitations which prevent their replacement with non-toxic materials or elements.



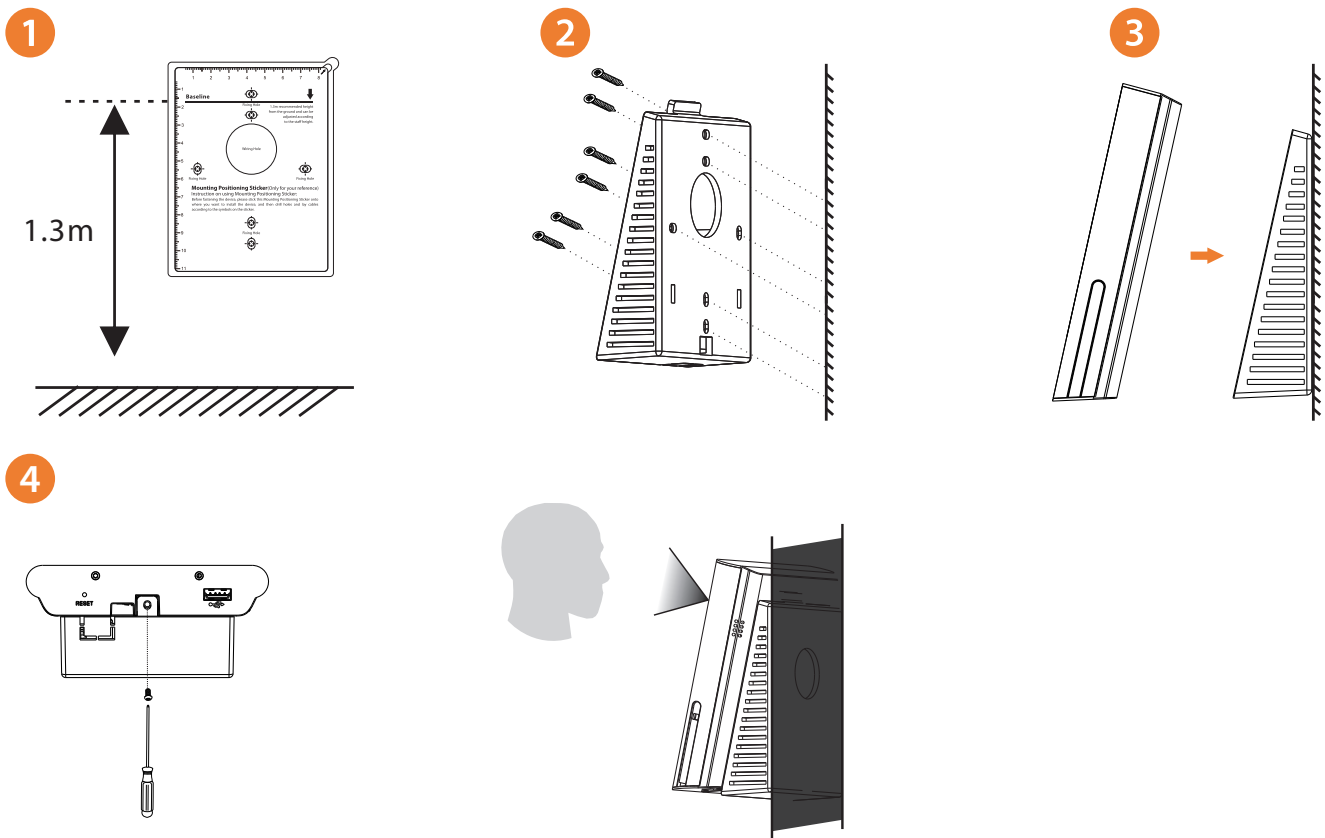
Installation Guide

How to Install the Device?

With Back Cover:

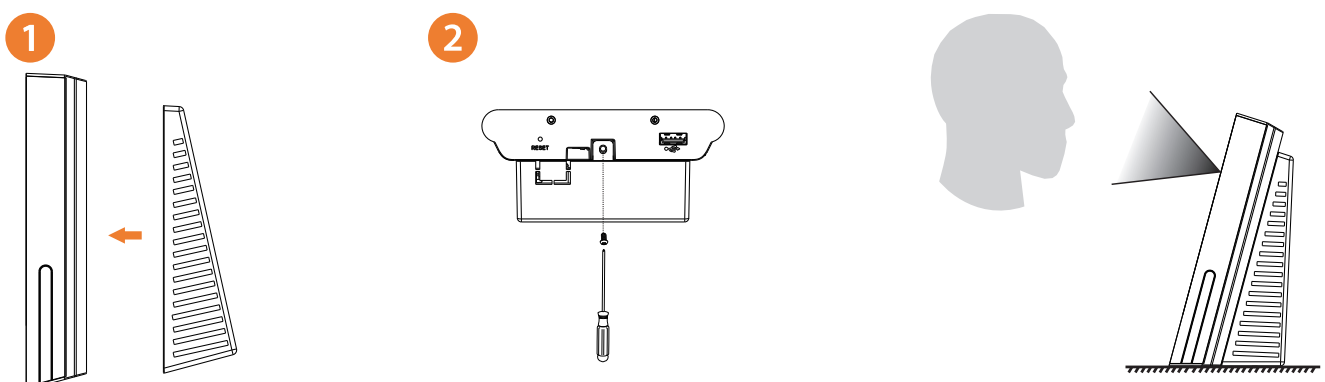
● Wall Mount

1. Attach the mounting template sticker to the wall, and drill holes according to the mounting paper.
2. Fix the Back Cover on the wall using the wall mounting screws.
3. Attach the device to the Back Cover.
4. Fasten it with a security screw.



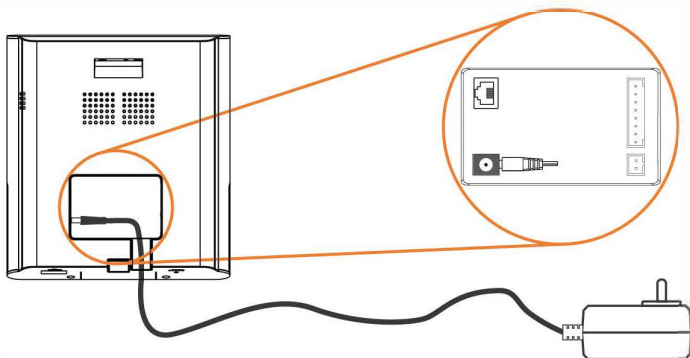
● Desktop Placement

1. Attach the Back Cover to the Device.
2. Fasten it with a security screw.



Wiring Diagram

Power Connection:

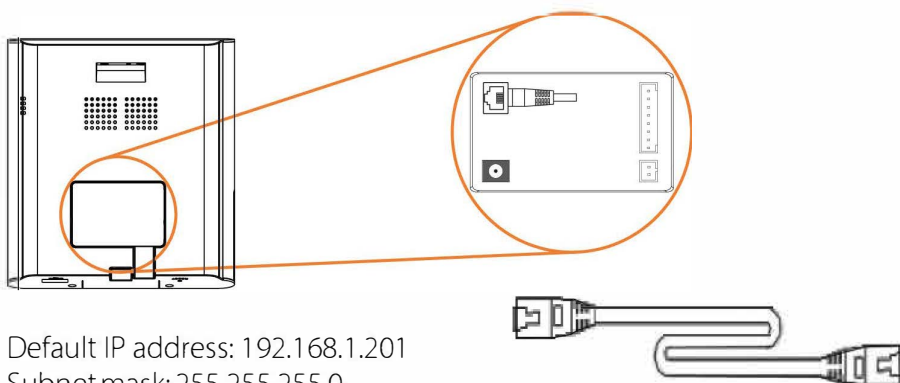


Recommended AC Adapter

1. $12V \pm 10\%$, at least 1500mA.
2. To share the power with other devices, use an AC Adapter with higher current ratings.

Ethernet Connection:

Connect the device and computer software over an Ethernet cable. As shown in the example below:

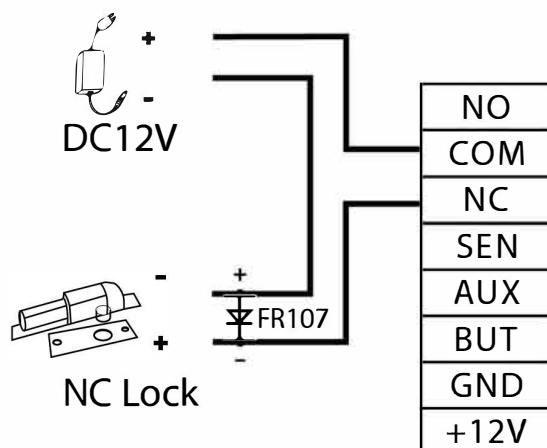
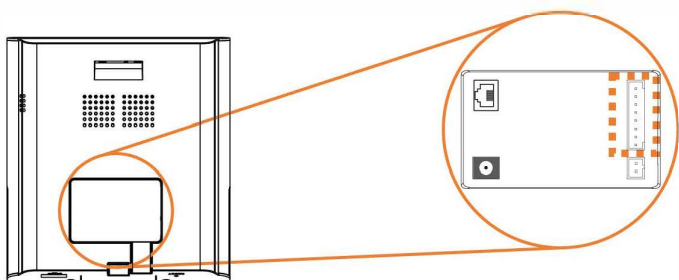


Default IP address: 192.168.1.201
Subnet mask: 255.255.255.0

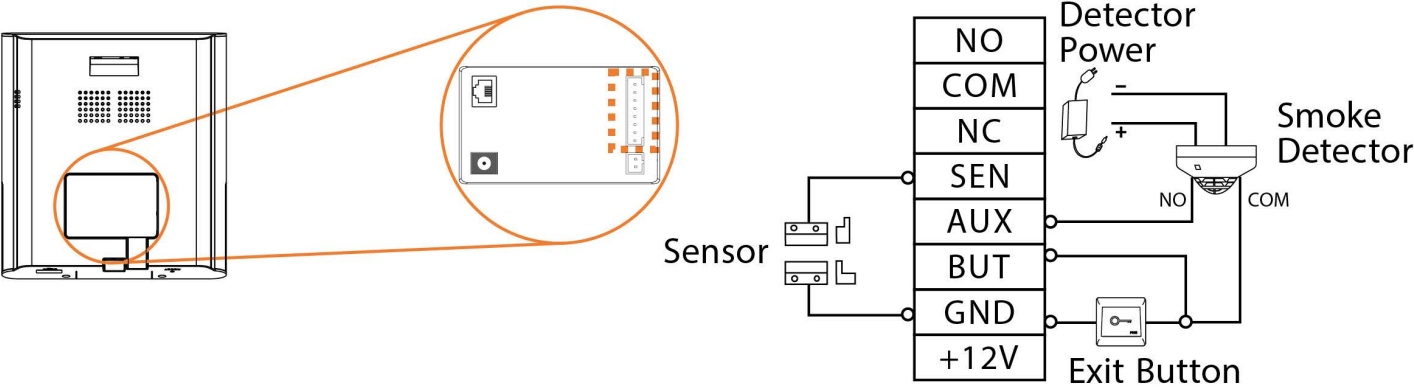
Click on [COMM.] > [Ethernet] > [IP Address] , input the IP address and click on [OK].

Lock Relay Connection:

Device not sharing power with the lock



Door Sensor, Exit Button & Auxiliary Input Connection:





Workplace Intelligence

2525 FYI Center, Building 1, 5th Floor,
Unit 1/506, Rama 4 Road, Klong Toei,
KlongToei, Bangkok 10110, Thailand

Tel : (+66) 2 784-5855